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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,475	11/12/2003	Judith Schwabe	SUN-P8742	9313

7590 02/11/2005

David B. Ritchie  
Thelen Reid & Priest, LLP  
P.O. Box 640640  
San Jose, CA 95164-0640

EXAMINER
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CHAVIS, JOHN Q

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 02/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/712,475

Applicant(s)

SCHWABE ET AL.

Examiner

John Chavis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau. (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/12/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: on page 3 the serial numbers of various related applications has been omitted.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (6,363,523).

#### What is claimed is:

1. A method for arithmetic overflow detection, comprising: receiving a first instruction defined for a first processor having a first base, said instruction comprising an operator and at least one operand having an operand type; and

indicating whether said at least one operand has potential overflow based at least in part on said operator and the relationship between said operand type and a result type associated with said operator.

#### Chen '523

See the preamble of claim 1 and the receiving function.

The indicating feature is inherent when the optimizations are based on overflow potential to indicate which path is to be taken. In the preamble claim 1 of '523 indicates that it is an arithmetic overflow detection method; which, inherently provides for

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overflow based on the operator since only certain operations will cause or have the potential to cause overflow depending on the size of the numbers used. The relationship between the operand type and the result type is considered to provide indication of the size of the number (original type-for example, positive or negative) to the number generated by the operation (result type – again, positive or negative). See the definition of overflow from the Microsoft Computer Dictionary for an indication of the inherent features.

Note also claims 5 and 6 of '523.

2. The method of claim 1 wherein said method further comprises converting said first instruction to a second instruction optimized for a second processor having a second base when said at least one operand does not have potential overflow, said second base smaller than said first base, said operand type belonging to said second base.

See again claim 1 of '523

3. The method of claim 1, further comprising rejecting an expression that cannot be optimized to a smaller base on said second processor.

See claim 3 of '523.

4. The method of claim 1 wherein said first instruction is arithmetic.

See claim 5 of '523.

5. The method of claim 1 wherein said first instruction comprises a non-arithmetic, type-sensitive instruction.

See claim 6 of '523.

6. The method of claim 2 wherein said

See claim 10 of '523.

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first processor comprises a Virtual Machine; and said second processor comprises a Virtual Machine.

7. The method of claim 2 wherein said first base is used by said first processor for performing arithmetic operations on at least one data type, said at least one data type having a size less than the size of said first base; and

See claim 11 of '523.

said second base is used by said second processor for performing arithmetic operations on said at least one data type, said second base having a size equal to the size of said at least one data type.

8. The method of claim 2 wherein said first processor comprises a 32-bit processor; and said second processor comprises a resource-constrained 16-bit processor.

See claim 12 of '523.

The features of claims 9-16, 17-24 and 25-32 are taught via claims 1-8 above.


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Chavis whose telephone number is (703) 571-3720. The examiner can normally be reached on M-Tue & Th-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 571-3719. The fax

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phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'John Chavis', with a stylized flourish at the end.

John Chavis  
Primary Examiner AU-2124